

REMARKS

Claims 1-22 are pending. Claims 1, 11-13 and 22 have been amended. Claim 10 has been canceled. In the July 13, 2006 Office Action, the Examiner rejected claims 13 and 15-17 under 35 U.S.C. § 102(b) as anticipated by Dietz (U.S. Patent No. 2,293,597). The Examiner rejected claim 22 under 35 U.S.C. § 102(e) as anticipated by Marshall (U.S. Patent No. 6,547,423). The Examiner rejected claims 1-3, 6 and 11 under 35 U.S.C. § 103(a) as unpatentable over Marshall in view of Muraki (U.S. Patent No. 6,547,423). The Examiner rejected claims 7-9 under 35 U.S.C. § 103(a) as unpatentable over Marshall and Muraki and further in view of Suckow (U.S. Patent No. 6,679,618). The Examiner rejected claim 10 under 35 U.S.C. § 103(a) as unpatentable over Marshall and Muraki and further in view of Lewin (U.S. Patent No. 4,081,667). The Examiner rejected claim 4 under 35 U.S.C. § 103(a) as unpatentable over Marshall and Muraki and further in view of Singer (U.S. Patent No. 5,813,752). The Examiner rejected claim 20 as obvious over Dietz. The Examiner rejected claim 18 under 35 U.S.C. § 103(a) as obvious over Dietz in view of Morton (U.S. Patent No. 3,883,731) and claim 19 under 35 U.S.C. § 103(a) as obvious over Dietz in view of Colbert (U.S. Patent No. 2,390,424). The Examiner indicated that claims 5, 12, 14 and 21 would be allowable if rewritten in independent form. Applicants thank the Examiner for the indication of allowable subject matter. However, in light of the amendments above and remarks below, Applicants respectfully submit that all pending claims are allowable.

Claim Objections

The Examiner objected to claims 11 and 12 because of the presence of informalities. Applicants have amended claims 11 and 12 as suggested by the Examiner. Accordingly, Applicants respectfully request the withdrawal of the objections to claims 11 and 12.

Objections to the Drawings

The Examiner objected to the drawings because the “facets” of claim 10 were not displayed on any drawing. Applicants have canceled claim 10, and therefore submit that the Examiner’s objection to the drawings is moot.

Claim Rejections under 35 U.S.C. § 102

1. Claims 13 and 15-17 were rejected under 35 U.S.C. § 102(b) as anticipated by Dietz. Applicants traverse this rejection.

Applicants have amended claim 13 to require that the semi-cylindrical front surface of the reflector of claim 13 have a vertical axis. In other words, if the front surface were a full cylinder, the axis of the cylinder would be vertical. Therefore, light exiting the semi-cylindrical surface of the reflector of claim 13 must lie in a plane substantially perpendicular to the axis of the semi-cylindrical front surface. Applicants have further amended claim 13 to require that light be reflected out of the semi-cylindrical front surface.

Dietz does not disclose either of the above limitations. First, the top and bottom mirror surfaces 12 of Dietz are merely reflective surfaces on the body 10. A reflecting surface can not be considered to reflect “out of” itself. The top and bottom mirror surfaces 12 in fact reflect light

back into the body 10. Second, the purpose of the mirror surfaces 11 of Dietz is to “reflect light toward the channel 11.” (Col. 2, ll. 2-3). Accordingly, light is reflected in a vertical plane, parallel to the channel 11 and parallel to the axis of the semi-cylindrical body 10. As a result, it can not be said that light is reflected in a “substantially horizontal plane.”

Claims 15-17 are believed allowable for at least the reasons present above with respect to claim 13 by virtue of their dependence from claim 13.

2. Claim 22 was rejected under 35 U.S.C. § 102(e) as anticipated by Marshall. Applicants traverse this rejection.

Applicants have amended claim 22 to require that the curved front surface be rotationally symmetrical about a vertical axis. Applicant submits that Marshall does not disclose such a front surface. Marshall discloses a flat front surface (Fig. 1A) as well as a generally flat front surface with a semi-spherical protrusion (Fig. 5). Marshall nowhere discloses a front surface that is rotationally symmetrical about a vertical axis (i.e., about an axis perpendicular to the optical axis). The front surface of Marshall is rotationally symmetrical about the optical axis, but not about an axis perpendicular to the optical axis. Accordingly, Applicants submit that claim 22, as amended, is allowable over Marshall.

Further, there is no teaching in Marshall that light is emitted in a substantially horizontal plane, as required by claim 22. In fact, Marshall explicitly states that the Marshall collimating device emits a conic beam. (Col. 2, ll. 19-23). A conic beam is not planar as required by claim 22. Applicants therefore respectfully submit that amended claim 22 is allowable

Claim Rejections under 35 U.S.C. § 103

1. Claims 1-3, 6 and 11 were rejected under 35 U.S.C. § 103(a) as unpatentable over Marshall in view of Muraki. Applicants traverse this rejection.

Applicants have amended claim 1 to require that the semi-cylindrical front surface of the reflector of claim 1 have a vertical axis, and that light exiting the semi-cylindrical front surface be in a substantially horizontal plane. In other words, light exiting the semi-cylindrical surface of the reflector of claim 1 lies in a plane substantially perpendicular to the axis of the semi-cylindrical front surface. None of the art cited by the Examiner, either alone or in combination, discloses such a reflector.

Applicants submit that, if Marshall were amended to include the semi-cylindrical front surface of Muraki, the modified Marshall reflector would not emit light in a substantially horizontal plane. Muraki nowhere teaches that light is emitted in a plane perpendicular to the axis of the semi-cylindrical surface, stating only that it is desirable to have a “sharp radiating light beam.” It is evident that a lens such as the lens in Muraki would, if anything, emit light in the same plane as the cylindrical axis. Moreover, Marshall expressly states that the goal of the Marshall invention is to output a “conic” beam that diverges less than prior art devices. (Col. 2, ll. 19-23). A conic beam is not planar as required by claim 1. Accordingly, neither Marshall nor Muraki, nor the combination thereof, discloses the emission of light in a substantially horizontal plane.

Further, Applicants submit that the combination of Marshall and Muraki is improper, as modifying Marshall to include a semi-cylindrical front surface “would render [Marshall] unsatisfactory for its intended purpose.” MPEP 2143.01(V). If Marshall were modified to

include the semi-cylindrical front surface of Muraki, the modified Marshall reflector would no longer have a rotationally symmetrical, bowl-shaped collimator lens, as required by every embodiment of Marshall. (See Abstract at ll. 1-3; Figs. 1-6). As a result, the modified Marshall reflector would be unable to emit a conic beam of light. Accordingly, there is no suggestion or motivation to make the proposed modification. *Id.*

Finally, Marshall in fact teaches away from the Examiner's asserted motivation for combining the references. The Examiner states that Marshall may be modified to include a semi-cylindrical front surface in order to accommodate a linear LED array, as disclosed in Muraki. However, Marshall notes that, when the light source has an appreciable surface area, it is difficult for a reflector to output a focused, conic beam of light. (Col. 2, ll. 16-19). When an array of LEDs is used, as suggested by the Examiner, instead of the single LED of Marshall, this problem is exacerbated. Accordingly, Marshall teaches away from utilizing an array of LEDs. Note that the present invention does not use an array of LEDs sharing a single reflector. Instead, the present invention uses an array of assemblies, each assembly having a single reflector and a single LED. See Original Specification, Fig. 9.

Claims 2, 3, 6 and 11 are believed allowable for at least the reasons present above with respect to claim 1 by virtue of their dependence from claim 1.

2. Claims 7-9 were rejected under 35 U.S.C. § 103(a) as unpatentable over Marshall and Muraki and further in view of Suckow. Claim 10 was rejected under 35 U.S.C. § 103(a) as unpatentable over Marshall and Muraki and further in view of Lewin. Claim 4 was rejected under 35 U.S.C. § 103(a) as unpatentable over Marshall and Muraki and further in view of

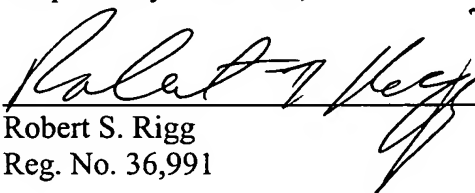
Singer. Applicants respectfully submit that claims 4, 7-9 are allowable for at least the reasons presented above with respect to claim 1 by virtue of their dependence from claim 1. Moreover, neither Suckow, Lewin, nor Singer remedy the above-referenced deficiencies of Marshall and Muraki. Finally, Applicants submit that the rejection of claim 10 is moot as claim 10 has been canceled.

Conclusion

For the foregoing reasons, Applicant respectfully submits that the pending claims (1-22) are in condition for allowance and requests that the Examiner issue a notice of allowance in the above-identified application. The Office is authorized to charge all fees, if any, associated with this Amendment to Deposit Account No. 13-0019.

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Respectfully submitted,


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